

FALSE ACCUSATIONS AGAINST THE RE-REFINING INDUSTRY

The recent reply of Europa to the questionnaire prepared by the Environment Commission for the Stakeholders concerning the elimination of the Community Directive on waste oils that appeared on internet, has some attachments where some remarks already expressed in a previous report are taken up again. The aim of these remarks is to place the rerefining industry in an unfavourable light through false accusations, prejudices, clichés, use of outdated studies, deliberately ignoring the current situation.

Petroleum is the main cause of pollution in the world but, unfortunately, for the moment it is indispensable to the development of our civilization.

To reduce the environmental impact the lead has been taken out from petrol but the benzene has been increased.

The processes used in the production of the different kinds of petrol create a large amount of by-products in which concentrate all the most hazardous substances and that are normally employed as fuel by the heavy industry and, likewise, the aromatic extracts in the rubber mixtures are forbidden but they can be added to fuels.

Anybody can see the results of this and our cities have become real gas chambers.

However, this is an inevitable route and we can only try to limit the damage and reduce consumption, while waiting for cleaner energetic sources of supply like Hydrogen, GTL, renewable sources, cold nuclear scission, etc.

On the contrary, what it is really inexplicable is the obstinacy of Europa in wanting to throw in the cauldron with all the other poisons also 2.000.000 tons of waste oil even if they know very well the danger of it (e.g. to burn 2.000.000 tons of used oil), acting out of self interest for reasons that are purely speculative.

Europa could spare us all this: it is a drop of style and professionalism that has no precedent.

We are convinced though that the authorities in Brussels will make everything clear and will objectively weigh all these considerations in the interest of Europe, without destroying all the positive things that have been done up to now and without giving in to any particular interest

A specific directive on waste oils must be maintained, in fact, implemented, because used oil is the most hazardous existing waste in consequence of the toxic and carcinogenic substances it contains and of its liquid and dark nature which makes it an easy receiver of any impurity or toxic substance.

Without an appropriate and specific control, different kinds of chemical products, solvents, varnishes, slops, styrene and other compounds having a calorific value may be put into the used oil, which can also conceal the presence of cyanide and other poisons used in productive processes.

Besides, the industrial waste oils always contain a part of the product with which they have come into contact or resulting from the activity for which the lubricant has been used, as well as chlorine, still largely used.

Furthermore, motor oils contain the additives residues, among which, in high percentages, the dangerous zincs, the phosphorus compounds, other metals and sulphur.

Also a big quantity of silicones is normally present in the used oil and, during combustion, they liberate very fine and impalpable dusts that no electrostatic filter or bag filter can catch and that cause silicosis if they are released in the air.

The presence of PNAs and aromatic substances makes them even more hazardous, both in case they are dumped in the earth, where they easily reach the water-bearing stratum irremediably polluting it, and during combustion because of their effects on the emissions, excluding perhaps the cement factories provided that they are equipped with proper control systems for the emissions and provided that they use the oil in the main furnace and not for other uses, so as to guarantee temperatures and residence times for the fumes in line with the provisions in force.

Also PCBs, which can be present in the oils, produce the hazardous dioxin if certain combustion parameters are not respected.

Therefore waste oil must remain a hazardous waste and, in case of combustion, it must be subject to the WID rules.

In fact it is not an oil product, as it is often superficially defined, which has lost its lubricant properties but which has kept unchanged its calorific value, so as to be compared to a virgin fuel. Therefore the possibility to reuse waste oil as fuel, just like the other oil products, must be categorically excluded.

The waste oils directive should be modified introducing more rigorous controls on the collection and segregation of waste oil from the other chemical and oil products, etc.

The Waste Oil Recycling Association admitted in several occasions that the waste oil collected in the United Kingdom contains more than 20% of foreign substances having nothing to do with the lubricating oil and the lack of any law control on the waste oils collected makes us think that the use of this oil collected for combustion causes the air pollution, noxious in many cases because of the falling of oxides, metals and substances hazardous for the population and the environment, with disastrous effects also for the food chain.

The United Kingdom case should be severally censured and reported to the competent authorities.

Besides the presence of more than 20% of foreign substances in the waste oil confutes the claim that the highest percentage of collection is obtained in a Country that uses this waste mainly for combustion.

Should collection include only waste lubricating oils, the United Kingdom's level would be very poor in terms of collection rate.

The new waste oils directive should be reviewed in accordance with the Italian model. Besides foreseeing obligations, prohibitions, competences, regulations for combustion and re-refining, authorizations and methods of collection, disposal and recording, the Italian legislation, which applies in a very faithful way the EC directives on waste oils, has established a private Consortium, not only in accordance with the principle "the polluter pays" but also with the producer's responsibility. Charging to the consumer a cost of 0,05 € per kilogram of oil put on the market, which is ridiculous compared to the cost of a can of oil which varies from 10 to 15 €/lt., this Consortium does the following services:

- 1) it collects the waste oil nationwide through a network of specialized and authorized collectors, provided with the most advanced equipments and motor vehicles;
- 2) it also directly performs the waste oils collection activity, having at its disposal some warehouses in different regions of the Country;

- 3) it selects the waste oils collected with a view to their correct disposal, making on each consignment 18 qualitative analyses in qualified and correlated laboratories, in order to determine their degree of toxicity and their suitability for re-refining, combustion or incineration in appropriate furnaces;
- 4) it gives the waste oils to the companies authorized to their disposal, according to the priority foreseen by the directive, with due respect of the principles of competition, free circulation of the goods, management low costs, health and environment protection from the air, water and earth pollution;
- 5) besides the Consortium makes an intense activity of advertising and collection promotion in the schools, associations and institutions using the mass media and it works under control of four important Ministers.

The only scientific study carried out in order to know the real quantity of waste oil recoverable from each use, both in the industry and in the automotive sector, was carried out in Europe by the Consortium with the co-operation of ENI Research and Technologies and of important marketing and consumptions analysis companies. This study points out that Italy has reached a leadership in waste oils collection and this is the proof of the excellence and efficiency of the Italian system.

On an average value of 58% of waste oil recoverable in the automotive sector, Italy has reached in 2004 a collection rate of 52% and also collection in industry has reached excellent values.

Only a few thousand tonnes elude this widespread collection that uses the most modern software and satellite technologies for a total individuation of all the points where the waste oil is available: a huge work that should be taken as a model in the other Member States, obtained with the minimum costs for the consumer, ten times lower than those incurred by the waste oils holders in the other European Countries. 90% of waste oils re-refining in Europe is now taking place in technologically advanced plants, provided with high pressure hydrofinishing or with solvent extraction, able to reduce to zero the aromatics and, consequently, the PNAs content.

Almost all these plants in Italy, Greece, Poland, Germany, Denmark and Spain are already able to produce API Group II lubricating bases, sulphur free, with high viscosity index and saturates. The yield in terms of products that can be used has now reached 100%.

Natural gas is mostly used for the plants running, there are no residues from processing, the PNA content is lower than that of virgin oils as well as the mutagenicity modified Ames test, IP 346 Assay and Sun UV Assay.

The quantities of re-refined oils produced in the old plants are now ridiculous and they tend to disappear.

The total capacity installed in these modern plants amounts to more than 700,000 tonnes and it is almost completely exploited.

The re-refined bases produced in these high-technology plants are the only available in Europe, together with the synthetic oils and with modest quantities of Group II or III bases produced by big oil companies, able to meet the demand of new generation finished lubricants that guarantee longer oil drain intervals and assure sulphur-free emissions, because sulphur is a poisonous component for the new type of catalytic converters.

Unfortunately, contrary to what has been happening in the USA and in the southeast of Asia for more than fifty years, the big oil companies producing lubricating bases in

Europe do not invest for the production improvement and for the reduction of the energy consumptions.

With the exception of small quantities of Group II and III base oils, almost all the virgin base oils produced in Europe are represented by Group I bases, having low viscosity index, high presence of aromatics and a sulphur percentage of 0,5-0,6%.

Even worse characteristics are found in the bases produced by the east of Europe plants.

Only ENI Div. Refining & Marketing has started in Italy some big investments for the production of Group III base oils.

In order to meet the higher performances requested to the new generation engine oils by the motor vehicles manufacturers, it is necessary to blend them with expensive synthetic oils or to make formulations having a high presence of toxic chemical additives.

The processes applied date back to at least seventy years ago with the classic distillation chain, propane de-asphalting, solvent extraction, dewaxing and HDF. These oils are no more fit as motor oils or industrial oils when they may come into contact with the workers producing skin diseases and allergic effects, as it happens for the blending oils. They request a huge quantity of additives and the high sulphur content contributes to reduce the catalytic converters efficiency.

The European industries producing lubricating oils should be called to a greater sense of responsibility, to the closure of the obsolete plants, to their reorganization with new and cleaner technologies, less expensive from the point of view of energy and able to produce ecologically more valuable oils.

Besides, also the recent ICIS LOR Congress has pointed out the limits and the end of Group I lubricant bases.

We should also wonder what becomes of the residues from virgin oils processing like for example the aromatic extracts, whose combustion may produce unpleasant effects for the environment and that are still used for purposes that should be forbidden.

It's absurd that the oil industry, through its own association named Europaia, tends to show re-refining in a bad light while, as a matter of fact, re-refining is the only industry in this field that has strongly invested during the last few years in order to adapt its plants to the most modern technologies and to gear its products to the market needs.

Besides Sofres' and Europaia's recent studies make reference to LCA dating back to the nineties and made for specific local situations. Therefore these LCA don't keep into account the technology and consumptions evolution and giving to these analyses a universal validity is wrong and instrumental.

Fortunately IFEU has made in February 2005 a new LCA, not only as a comparison between re-refining and combustion but also between re-refined bases and virgin bases production.

The new LCA's Executive Summary and Critical Review were presented on the occasion of a workshop held in Brussels on 1st March, under the aegis of Prof. Vittorio Prodi of the European Parliament Environmental Commission.

The new LCA has clearly pointed out:

- the environmental and energy benefits of the five biggest re-refining industries, compared with the virgin oils production in the refineries;

- that the increased use of synthetic and semi-synthetic lubricating oils as motor oils significantly increases these benefits;
- that also the comparison with combustion produces greater environmental benefits for most of the fuels considered. Also in the case of combustion, the bigger is the quantity of synthetic or semi-synthetic oil used by the market of finished oils, the greater are the global benefits assured by re-refining.

To conclude, the LCA states that, compared with the production of virgin oils, waste oil re-refining contributes towards an important resource conservation and reduces the environmental impact in such a way that makes the priority given to this activity by the community directives totally justified.

It is therefore correct to say that:

- rerefining is the best way to dispose of waste oils and therefore the priority granted by the community directives is totally justified;
- only the rerefining industry has invested in advanced technology plants and is able to produce base oils that meet the modern requirements as far as the quality and the environmental benefits are concerned;
- the obtained products are practically without PNA, PAK, PCB and the performance tests that have been carried out (also validated by Mr Blackbourn, who is a real authority on the subject) point out that rerefined oils and virgin oils are absolutely equal.
- the waste oils collected and used in the rerefining industry undergo severe quality controls and screenings, thus offering better guarantees in comparison with a widespread and unverifiable burning;
- the community directive should take the Italian system of waste oil collection as a model. In Italy in fact over 80% of the waste oil is rerefined for the production of Group II lubricant bases of very high quality, with a collection rate that is the highest in Europe for quantity and quality.

The directive should provide for two utilizations only: priority rerefining for the production of lubricant bases and burning in cement factories. The production of fuel, even if it is possible, would not be economically sustainable;

- it would be the right occasion to fix restrictive regulations also for the toxicity and sulphur levels of the virgin oils produced in Europe in order to encourage a reorganization of this field that is still working with obsolete and uneconomic processes;
- all the fiscal benefits in favour of burning that have caused great competition distortions and anomalous flows of products should be eliminated;
- the new IFEU LCA is the only one that should be taken into consideration when setting the pros and the cons of the different systems of disposal and to confirm the priority to rerefining. All the previous studies are outdated;
- the use of residues coming from cracking and the extraction of aromatic substances should be regulated because their combustion is harmful;
- if we consider all the advantages obtained from an almost total collection, a raw material recovery equal to 80% of the collected used oil, burning limited to cement factories and therefore extremely controlled, the low costs, the fact that if we rerefine it is as if every four years the total need of lubricant oils was produced without importing any crude oil, the environmental benefits, the price

control effect on the rerefined oil market to defend the small/medium producers of finished lubricants, the limit that would be set to the excessive power of the major oil industries, the Italian model and its relevant regulations should become an integral part of a revision of the community directive on waste oils.

A wild deregulation like the one that is under consideration would make us go back of half a century with such disastrous consequences that it is difficult to imagine.

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